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ABSTRACT

An experimental curriculum providing for participation of art students in urban planning was tested in New York City eighth grade classes. An analysis of the conceptual material embodied in the social studies was translated into parallel concepts consistent with art theory and reinforced by contemporary urban design theory. This produced a framework of concepts from which a curriculum unit was developed, embodying tactile and visual classroom activities. "The City as an Act of Will," "The Awareness of Space as Experience," and "Stimulus Movements Systems" were key themes in the unit which received supportive review from the American Institute of Planners and the Architects Institute of America. A re-development problem was given to an experimental group of students and to two control groups, to be performed in the presence of a qualified jury consisting of one professional art educator, one professional planner, and one architect. A consensus of the jurors upheld the hypotheses of the study, which were that the experimental students would be more apt to relate form to function and would tend to defend their proposals from a wider frame of reference and be stronger on rebuttal than the control groups. Further curriculum development and teacher education in this area was recommended. (A demonstration lesson is included.) (Author/MF)

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FINAL REPORT

PROJECT NO. 8B022

GRANT NO. OEG-08-08022-3687-(010)

THE DEVELOPMENT AND TESTING INSTRUCTIONAL STRATEGY WHICH PROVIDES FOR PARTICIPATION OF ART STUDENTS IN URBAN PLANNING

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MAY 1969

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SUMMARY

The problem under investigation was to develop and test an instructional strategy which would prepare students to participate in the planning processes of their own time era with aesthetic and social awareness.

A search of the literature in the areas of social studies, art education, urban design, and child development provided the common denominator of the concept of continuous change. The instruction therefore devolved on process, rather than product, on heuristic rather than didactic methods, on concepts applied in open ended fashion rather than on closed definitive forms.

"We are dealing less with occurrences than with processes. Since nothing exactly ends, nothing can be exactly defined." (Elizabeth Janeway, New York Times)

The scope of the study was confined to eighth grade classes in New York City. In New York, a revised social studies program offers "Urban Problems, the Challenge of a Changing Society" at the eighth grade level.

An analysis of the conceptual material embodied in the social studies was translated into parallel concepts consistent with art theory and reinforced by contemporary urban design theory.

This produced a framework of concepts from which a program could be developed. The comparative framework was read by Benton MacKaye who characterized it as "terse" and "understanding" and Lewis Mumford, who termed it "stimulating."

A curriculum unit was developed, embodying the concepts into tactile and visual classroom activities. This unit was read and approved by the urban design committee of the American Institute of Planners and by a committee of the American Institude of Architects, New York Metropolitan Chapters.

A three group experimental study was devised in consultation with Dr. Irving Bernstein of the Courant Institute, New York University. Dr. Bernstein equated the groups using techniques of covariance. Co-variants included Metropolitan Battery test scores and data derived from the Vigier tachistoscopic presentation of urban stimuli.

The experimental curriculum was given to one group and withheld from two control groups.

At the end of the demonstration period, an identical redevelopment problem was given to the experimental and control groups, to be performed in the presence of a qualified jury consisting of one professional art educator, one professional planner and one architect. The final redevelopment problem was designed in consultation with Professor Perry Norton, Head of the Department of Planning, graduate school of Public Administration at New York University. A technique for rapid "three-dimensional sketching" was evolved for use in this problem.

A rating sheet was designed for the use of the jurors, and approved by the statistical design consultant. It consisted of ten questions in four categories:

1. Involvement - (destructive, apathetic, negative, playful, serious-constructive).

2. Perception - (recognition of local environmental factors in terms of function, appearance, paths, relationships, spatial setting, landmarks, natural or man made character).

3. Manipulation of urban forms - (redesign processes, extent of group participation, organic nature of concept, related form to function, space and access, development of interacting expressive or symbolic forms).

4. Defense - (ability to explain changes and defend them against challenges).

A consensus of the jurors upheld the hypotheses of the study which were:

1. The experimental group would be more apt to relate form to function than the control groups.

2. The experimental group would tend to defend their proposals from a wider frame of reference and be stronger on rebuttal than the control groups.

The significance of the research as stated in the art education juror's written opinion "is-great. It offers the children of our schools not only the sharpening of perception but presents them a way of thinking and planning for urban improvement - a timely and sorely needed area in education."

A report on radio station WNYC by Robert Weinberg, architectural-critic, at large, described the strategy as "an auspicious beginning of education in the new science of improving our surroundings." (The full text of critic Weinberg's report is included for dissemination in the Conclusions and Recommendations section.)

It is however, only a beginning. Recommendations for further action include:

1. Preparation of a teacher training film embodying curriculum activities and concepts. This would serve as the "image" component of an overall systems design for ekistic education.

2. Development of curriculum in scope and sequence from Kg-12th grade, utilizing the services of a group of professional educators such as the Institute for Studies in Art Education? This would serve as "project" component of an overall systems design for ekistic education.

3. Preparation of a liberal arts course of study on the undergraduate college level for prospective teachers and other students, based on the findings of this study. This would serve as an interlocking unit in the "functional" component of an overall systems design for ekistic education.

4. Institution of workshops for in-service teachers with classroom demonstration and feedback into curriculum development: units in the "functional" component of an overall systems design for ekistic education.

5. Systems development in a given geographic area, such as the tristate New York, New Jersey and Connecticut, to be expanded to the Eastern Megalopolitan seaboard. Systems development includes all the above components plus area plan, comprehensive plan, capital program, and money entity. Systems design is a system of interdependent units functioning in relation to one another to produce a single outcome - ekistic education which prepares the student to participate in the process of planning the environment of his own time era, with social, aesthetic, and ecological awareness.

Budgeted proposals scaled to the implementation of each of these recommendations are described in the conclusions and recommendations section of this report.

INTRODUCTION

Our cities are a nightmare, yet the trend to urbanization is increasing. (Scientific American)[1]

For perhaps the first time in history, we have the means of producing an enjoyable environment. Yet the public level of expectation from its urban environment is low, and relatively uninformed (Lynch).[2]

Ekistics is a word which describes the science of human settlements, conditioned by man and influenced by economics, social, political administrative and technical sciences and the disciplines relating to art (Doxiadis).[3]

The investigator's doctoral research explores the aesthetic dimension of ekistics as it relates to art education in the public schools. The present research is concerned with the developing and testing of an instructional strategy which provides for the participation of art students in urban planning.

The classic text for urban design in public school curriculum[4] was Wacker's Manual for the Schools of Chicago, c.1911, written in conjunction with the City Beautiful drive of the early twentieth century, and carrying the message of Daniel Burnham's plan for Chicago to the children of Chicago at their most impressionable age, eighth grade. (Walker).[5]

Between 1911 and 1940, a change of concept as to the nature of physical planning accompanied the accelerated tempo of social, technological and economic change. The concept of the Master Plan became more fluid. Georgia's textbook, Building Atlanta's Future,[6] though inspired by the Wacker Manual, featured a new, relatively open-ended approach to planning as opposed to the didactic method of the Wacker text. Philadelphia, in 1947 appraised the classical Wacker model as inappropriate to the current realities of rapid change and flux. The education was significantly, "relocated" from the civics to the art class. In the art class, a total engagement of all the senses is involved, rather than a purely cerebral approach. Planning Commissioner Edmond Bacon of Philadelphia compared the two curricula.

"Unlike Chicago, where the children studied a plan done by somebody else, in this case, the Burnham plan, the children themselves made their own models of their neighborhoods as they found them and then made models as they would like them to be. Because they participated in planning as a process, they will not produce a plan thirty years out of date, as they did in Chicago, but rather will participate in the planning of their own time period.

Unfortunately, the Philadelphia program expired after one year's active use. "The tremendous vitality of the 1947 program has not been repeated in later work" (Bacon). "Dead as a doornail." (Goldman).8 "Maybe you can get this rolling in New York" (Bacon).[9]

In order to provide stability, continuity and equilibrium for ekistic education as on going curriculum rather than educational "putsch", a systems design (described Conclusions and Recommendations) is recommended. One major component is a strong teacher training program with administrative backing and support.

METHODS

The point of departure was a listed statement of concepts prepared by a battery of scholars for the revised social studies curriculum viewed as process.

Related concepts in art were developed by the investigator, using as criteria of relevance ten criteria developed by Grotey (Concepts of the Self Utilized by Philosophers in Contemporary Educational Theorizing).[7]

Contemporary aesthetic concepts in urban design were abstracted from the literature and related to the above.

Also, developmental drives in children, perception by children as outlined by Piaget,[8] were noted, as well as recommendations in the existing art syllabus for New York City.

A curriculum unit of related lesson plans was designed for an eighth grade class. It emphasized visual thinking, group experience, broadening of perception, building evaluative criteria, and personal commitment to the problem solving effort. It was read and approved by thecooperating agencies.

An experimental three group design was instituted in cooperation with the Bureau of Research of the Board of Education in New York City. A special problem was posed by the refusal of certain school principals to permit the use of control groups on the theory that withholding the experimental effect constitutes deprivation and discrimination. This problem was solved with the assistance of Miss Olive Riley, head of the N.Y. City Art Department, who located cooperating schools in the Manhattan borough of New York City.

Teacher, department, principal and superintendent permissions having been secured, the experimental and control groups were designated and equated by techniques of covariance. Co-variants included Metropolitan battery test scores and data on density, saturation, and pictorial score responses to the Vigier tachistoscopic presentation of urban stimuli. The unabridged original report of this presentation, developed at the Harvard School for Cognitive studies, was made available by Professor Vigier.

The investigator administered the tachistoscopic presentation to all three groups. Three slides of urban streets in the area were used. There were three exposures at 50 milliseconds, two exposures at 100 milliseconds, and n exposures at 200 milliseconds. The subjects made written protocals on sheets organized to allow rapid location of the elements. The subjects were instructed to raise their hands when they felt further viewing would not contribute substantially to an understanding of the stimulus. In addition, the subjects were asked to draw the stimulus after the terminal presentation. Each slide stimulus took from twenty five to thirty minutes, the number of presentations varying according to the saturation point. Terminal drawings were accomplished in one or two minutes time.

The density score was achieved by a simple count of responses. The saturation score was noted from the frequency or number of times viewed as recorded on the protocol sheets. The terminal drawings were rated on a five point scale designed by the investigator and approved by the statistical design consultant. One point was given for recognition of major elements, one point for indication of dynamic movement through space, one for textural variation and light and dark, and one point for significant detail. Nine variables resulted from responses to three stimuli, each scored with respect to density, saturation and terminal picture.

The hypotheses of the study were measured by a consensus of the written opinion of three jurors, separately submitted. Rating scores, approved by the design consultant, were prepared for the convenience of the jurors. Jurors included a professional environmental planner, a professional architect, and a professional art educator, each with a minimum of five years experience and membership in a recognized professional organization in his field.

RESULTS AND FINDINGS

This is discussed under three headings:

1. Basic Concepts
2. Curriculum Unit
3. Experimental Results

1. Basic Concepts

The concepts arrived at are described in detail in the full dissertation titled Art Education and Ekistics. They include the following:

1. "History is a continuous process leading to the present."

Urban design is a continuous process. Each generation must examine the inheritance from the generation before and redefine its goals in terms of past current and anticipated experience.

Architecture may be currently defined as the articulation of space so as to produce in the participator a definite space experience in relation to previous and anticipated experiences.

The "awareness of space as experience" lies at the heart of contemporary urban design.

2. Urban design involves a complex relationship of multiple factors in both simultaneous and sequential time. (just as history is not a simple linear progression, measured by important dates, but a complex process resulting from the interactions of multiple causes). The inherent meaning of these relationships can be enhanced by symbolic expressive forms.

Simultaneous movement systems, the paths along which city people move, are conceived in terms of three concepts:

1. Relationships of Mass and Space. Space is the dominant concern, mass (buildings) being viewed as the product of movement through space. Mass itself is often etherealized through the use of transparent glass as a building material. Mass serves to delimit a space. Architects at city scale no longer think in terms of the single building, but rather the networks of space, delimited and articulated by buildings and other forms.

2. Continuity of Experience. The role of the urban designer - and the expectation of the urban dweller - should be to create a harmonious environment for each individual who resides in it from the moment he rises in the morning until he retires at night. Movement though space provides a continuity of experience derived from the nature and form of the spaces through which movement occurs.

3. The Central Force of Urban Design lies in organic movement systems directionally impelled, with flexible capacities for growth.

The points of connection between systems (such as a subway entrance which connects the pedestrial system with the underground train system) can serve as special places of design embellishment and enrichment, just as the point of change from water to vapor in a tree is the place where flowers and fruit develop.

Simultaneous movement at different rates and modes to form a continuity parallels the musical idea of the simultaneous development of various themes to form a musical whole.

Movement systems relate to natural and manmade topography. They can emphasize monuments or landmarks or buildings or spaces of special significance to the community. (Society Hill's pedestrial walkway radiates from the Liberty Bell in Carpenter's Hall to the 1M Pei towers and the 18th century restorations).

The design of each movement system relates to the tempo of the movement it accommodates.

Expressway systems require free flowing forms and widely spaced articulation according to the speed rhythm of automobile travel.

Pedestrian movement systems require interest, variety, and impressions of rapid change achieved by the frequent use of focal points and symbolic objectives with angled vistas and definite termini.

The problem is to deal simultaneously with different speeds of movement and different modes of perception to create forms satisfying to motorists as well as pedestrians.

The architecture of movement and the architecture of repose make the form of the city.

The functional demands of housing, commerce, services and recreation make competing claims for a finite amount of land. Harmonious resolution of these claims is a problem of planning.

3. The present influences our understanding of the past.

Historic urban designs are freshly interpreted in the light of our current experience.

Current experience is dominated by an awareness of space, energy and space-time relationships.

An aerial photograph of ancient Pergamon reveals basic structures similar to those explored by a Paul Klee drawing of interpenetrating energy forces.

By penetrating the surface manifest of stylism, we can better comprehend the inner forces at work in the creation of great compositions of the past, as fresh today as at the instant conceived.

The emphasis on single building design, highly developed as it is, cannot solve the qualitative change in the design problem posed by architecture at city scale. Mechanical repetition of small scale ideas will not work. A review of dynamic first principles, which begin with the movement of a point to produce a line, leads to the concept of the forward thrust of a building projecting a shaft of energy into space. The shaft has no actual substance but exists as a design force of major influence in architectural composition.

4. Change is a constant, in art, as in history, and in cities.

Educational strategies must be designed to cope with changing forms and circumstances.

Conceptual mastery and the ability to form and test alternative hypotheses lead to the Eureka effect. Here the student learns to find our things for himself, the overall goal of learning to learn.

Urban design understandings are approached heuristically, in the spirit of inquiry, rather than didactically, with authoritative and final answers, if the students are to meet the problems of a changing society.

5. Change is not necessarily progress.

Newness of an urban development is not in itself a guarantee of goodness. (viz. Jane Jacobs, Death and Life of American Cities)[9]

Change must be evaluated in terms of basic criteria of value such as "Does it satisfy human wants"-"does it serve the entire population (or an elite few)" "Does it enable the participant to function with greater satisfaction in an identifiable environment?" "Does it serve short term needs at the expense of long term values" "Is it scaled to the measure of man" "Does it maintain a balance with the ecology" "Does it respect individual needs for personal space?" "Does it enhance and dignify the life experience?"

Educational strategies should stress the development of a wide range of criteria for evaluation of urban form in preparation for participation in the planning process.

The city is a physical entity which man interposes between himself and his ecology. Its image is composed of paths, modes, edges, districts and landmarks.

It becomes a pitiless indicator of the state of his culture.

In its highest form, it serves to enhance life for all its inhabitants. Its architectural form is a profound expression of man's relation to the universe. Urban design does not seek to launder the wrinkles out of human experience in a bland homogeneity of "easy living" settings. "Wet and wild, let them be left, let them be left" refers not only to conservation of natural wilderness but also to the "wet and wild" of the spirit. (Mumford)[10]
"Terrabilita" has its place along with the climbing rose-cum-picket fence. (Nairn)[11]

The planner's function is to optimize choices.

2. Curriculum

A sample curriculum unit was composed and demonstrated as the experimental effect in the three group design. Depending on the resources available to the teacher and the particular circumstance of the class, it can be modified or expanded in a number of ways which yet embody the same concepts or understandings.

Sample Unit

Lesson One — Daily Environment — 90 minutes

Arms: 1. to focus attention on the immediately experienced daily city environment.

2. to make a strong personal identification with environmental surroundings.

3. to recollect the shapes and spaces moved among en route to school.

Methods: An imaginary trip "Time Travel", crank backward an imaginary lever on the neck, cutoff at 8 A.M. YOU ARE THERE, leaving home for school. What is around you? How does it change as you move?

Activity: Make a cartoon sequence, as in the comic strip or continuous narrative artform. It can be in mixed media using drawing and collage from newspaper and magazine clippings. Each student begins with a representation of himself as the focus. "Without you there is no environment" (subjective involvement).

Resources: Paper, pencil, crayon, scissors, paste, magazines, newspapers, construction paper, transparent and opaque and textured papers, individual experience of each child recollected and expressed. (A single frame can be developed out of the cartoon sequence into collage in terms of color, texture, "noise", proportion, detail, different weathers, different times of day or developed into a three dimensional stage setting. In either development, the student can enrich his product by going home and looking harder, more attentively, then come back to class and alter or enrich his drawing or model).

Evaluation: does it get crowded and confused? Is it empty of things or people? What is missing? What did I remember most vividly?

Why are these things there? Who put them there? What was it like when the Indians were here? (Where someone drew a line, I now walk. Who draws the line?)

Homework: Make a list of five things you forgot to put in.

Lesson Two Landform and Landuse 90 minutes

Aim: To realize the city is man made.
To create a landform based on collectivized personal experience of recollected footfalls.
To practice the use of scaled proportion.
To use one's personal scale (height) as the measure for everything else (the human module).

Method: Another "trip". The shrinking machine or transistorizer. Climb into imaginary shrinking machine, reduce to 1/2" or the size of your knuckle, cut off the power. Climb out 1/2" big. Make a clay module of the 1/2" figure, representing yourself, labelled "ME". Use it as the measure or yardstick to estimate the sizes of everything else.

Take the Time Travel express to 8 A.M. you are there; this time with your eyes closed. Concentrate on the slope of the land, uphill, down or level. Model individual landforms accordingly with paper mâché on cardboard. Put the module on the land and use it as a reference to distance, height, slope of descent or ascent.

Do not include streets or pavement. Add trees by inserting twig or clipping, cut to your own scale, into the mache, as it might have been when the land was wild.

Resources: storage space for completed forms to dry on. Small amounts of clay. Instant paper mache or torn newspaper strips and wheatpaste. Bowls of water. 8 x 14 cardboard. Memory, the experience of walking in a particular place.

Evaluation: First there was nature. Man learned to control it for his own uses. Now there are manmade cities.

What was the space to move in like for the module? It was open and continuous, except for natural interferences such as thorny brush and outcrops of rock or barriers like water. Often hazardous.

What happened to the movement space when cities were built and services developed? To be explored next week.

Homework: Check the slope and direction of the ground underfoot. See how the buildings compensate where they meet the ground.

Lesson Three 90 minutes
Landform and landuse II Typical Town Construction
How a City Happens

Aim: To realize the competing demands made on a finite piece of land by the various interests which develop the city.

Introduction to the problems of access, movement, circulation, formation of districts, paths, and magnetic attractions which draw people in.

Method: Four work centers are arranged for a group construction on a central table in a procedure which is compartmented but not structured: labelled services, Housing. Commerce and Industry, Recreation.

Each center produces its specialty. Services lays out streets, roads, power, traffic routes for truck, bus, passenger, car train, ferry, subway, pedestrian to scale measured from the human module. Housing produces mass and custom built dwellings under constant pressure to provide facilities for an influx of workers, business people, professionals and all their families. Business turns out factories, a power plan, shopping facilities, banks and offices. Recreation develops parks, playgrounds, plantings, schools, sports arenas, discotheques, theatres.

The products of each group are hustled onto the collective landform made by pooling the individual landforms in one large area and painting them a unifying color. They are placed on the form willy nilly where space seems available. Trees may be bulldozed away to make room for land investment, projects in business, housing or services. The recreation group may replant areas or fence off "wet and wild" land for conservation purposes. As available land dwindles, the groups may run into conflict for space in which to operate.

Discussion: Reason for pooling the cherished individual land holdings- need for electric power, water supply, roads and other common or community services.

What has happened to the continuous, hazardous natural space? It has been pushed inward and upward and tamed by paving, street lights, phone booths and other modifications. The old hazards are gone but new ones have arisen (traffic fatalities, air pollution.) Squalor, congestion, excitement, monotony, variety, competition and spillover into adjacent land on the outskirts of the form are apt to occur in this syncretistic simulation of how a city happens.

Resources: Cut paper, paste, fastenings, blocks of wood, assorted cartons at an appropriate scale for ready-mades, contact papers, labels, newspaper and magazine clippings, dowels, string, scissors, fencing, yew clippings, blue gelatine paper, textured greens, cement grays, paint store samples of colored squares of board, tarpaper, assorted spools, crayons, marking pens. Collective landform prepared the week before. Storage space for the sprawling model.

Evaluation: How quickly it changed! Everything happened together. "Some sections look like fun places" "Others were better before." "It's too crowded."

Homework: On your way home identify at least one building or place belonging to each of the four categories. Where are they located? (A parallel social studies development could have the students fill in given landuse street maps with planning code color and rating by number: 1-excellent, 2-good, 3-fair, 4-disreputable-blight of each dwelling and space. Related English studies might play theater of improvisation games- put a module on the form. He has just come to the city. Where would he go to look for a job? How get there? What adventures befall him before he arranges his night's lodging? Circulate other modules in the area according to their given identities-confrontations, interplay, tensions, gratifications, etc. How does the physical setting affect the action?

Lesson Four 90 minutes

Lesson on: Urban Space

Aim: to become aware of the role of created urban space as an arena for human activities.

to develop criteria for the evaluation of urban form.

Method: a "trip" in the "compression machine" to shrink to 1/2" scale and enter the city's cape created last week. Appraisal of the experience of moving about in this environment. Are the paths well marked? Are they convenient, ample, direct circuitous, or ambiguous. How could they be clarified and improved. Should different pathways be designed to accommodate different modes of traffic? Is there ample green space, is housing convenient to work, is business situated near the facilities which nourish it. Are services adequate. Is anticipation raised and gratified? Are there landmarks to distinguish the spaces or places? Is there a rhythmic flow from space to space, or choppy discontinuities, or a long dreary stretch of repetitive forms? Reorganize a given area to delimit a public space or square, like an outdoor living room. How would you create "a colored space"? Find a waste space. Transform it into a useful, attractive place.

or- Boom times. Prepare for an influx of new business, immigration of large populations, requiring more services, all on the same amount of land.

Resources: blander materials with machine made look to approximate the products of new technology, taller readymades for conversion to skyscrapers and elevator apartments, assortment of accessory materials suitable for superhighways, supermarkets, super billboards; screw eyes and string with tubular forms which can be pulled mechanically under the streets for subway travel.

Evaluation: The spaces between buildings are "where the action is." In moving about these spaces, can you tell where you are at and anticipate where you're going? To accommodate increased density of use in a small space where it is impossible to spread outward, in what direction do you build? Upward. What new problems are raised? Outward. Problems (commuter).

Homework: List three or more satisfying uses on the streets on your way home, three most attractive to the eye, three worst dangers, nuisances or irritations and three major eyesores or places of visual boredom. (The number three is arbitrarily selected. Any other will do).

Lesson Five 90 minutes

Lesson on: City Planning in actu

Aim: to find out what city planners do.

Method: invite a professional planner to give a lecture-demonstration. This may take the form of an illustrated before and after description of a project in progress from its inception to its implementation. Discussion should include inventory of resources, wants and needs, and allocation of priorities. Large blowups of the local streets in map form with overlays and code colored pencils can be used to locate the life-space of each member of the class from the paths he traverses on his daily rounds. (To the school, to the store, to play, to visit) a canvas of wants is countered with a recital of other uses which claim the area (office buildings) and some indication of the economic values involved, and the considerations which affect the allocational priorities, the decisions on uses.

Resources: American Institute of Planners, New York City, Urban Renewal Commission.

Evaluation: Question and answer discussion period centering on the needs, potentials and probabilities for development in the local school district area.

Homework: Find out what local organizations, if any, concern themselves with the shape, appearance and functions of the immediate community. Are any old buildings being torn down? New buildings being put up? Changes being made in the roads, or the businesses? Trees being planted, or parks developed? People moving in? Out?

Lesson Six 90 minutes

Lesson on: Urban Space inactu

Aim: To promote perception of daily environment in terms of spatial awareness:

the spaces defined and characterized by surrounding forms which admit or shut out light, wind, traffic, noise, and assume additional character by texture, color, and significant details of the enclosing forms.

Method: Take a "space walk in the street" with the class, beginning at the school exit. Compile spatial data. How far can you see" Where can you see the farthest? Where the least?

Where do you have the most room to move? Where are you apt to be jostled or crowded? Where do you have to walk single file?

How often do you have to stop? (For other pedestrians, for traffic crossings, detour to avoid garbage cans or trucks backing into driveways) Where can you run freely? Where must you look out sharply for dangers? How far can you go uninterruptedly?

The walk proceeds to the nearest natural barrier, such as waterfront. Analysis is made of the changing forms (stores on the avenues with bright signs and merchandise, tenement houses on the streets, warehouses on the farther streets, trucks under the dark expressway, pier on the sunlit river - note differences in the spaces linked by the walk).

Make rubbings of a textured area, (sidewalk, hydrant, wall, manhole cover, etc.) and return to the school.

If there is no natural barrier, walk to the edge of a district.

Discussion: what determines the end of one and the beginning of another?

On the return walk to school, stop to look at the skyline, how a building meets the sky.

Resources: Rubbing papers, crayon, permission slips to leave the school grounds, extra chaperone.

Lesson Seven 90 minutes

Lesson on: City Architectural Space inactu

Aims: to develop criteria on the creation of urban space in an architectural complex.

to experience movement in a designed spatial network.

Method: take a class trip to Rockefeller Center via subway (for contrast in modes of movement). Take the elevator to the observation roof and down a gain. Walk around the mall. Sit on the benches. Sketch or photograph the plantings, statuary, flags, walkways. Ice-skate in the rink and if financially feasible, eat at the grill. Take a bus back to school.

Resources: Permission slips, chaperones, accompanying architect from A.I.A. to comment on the layered, articulated spaces and lead discussion on positive and negative aspects of the design.

Evaluation: Discussion of the opening of space, articulated spatial networks, changes in street pattern, interaction of buildings and other features of this pioneering design of the thirties.

Homework: Look at your own street and imagine different ways in which space might be organized for more satisfying use.

Lesson Eight 90 minutes

Lesson on: City Architecture the World Over: Criteria for evaluating urban form

Aims: to analyze the achievements by great urban designers in creating clarifying and augmenting places as settings for urban life.

Method: slide lecture illustrating "the outdoor living room" (St. Marks in Venice), the symphonic, symbolic redevelopment by Michelangelo at the Campedoglio in ordering and embellishing a previously ambiguous space, color progression, anticipation and climax in a medieval Italian hill town, contemporary redevelopment in the United States (Philadelphia), new towns (Sweden) redevelopment in Rotterdam, New City, Brasilia. (Development of this as a series in conjunction with English and history and geography and economics lessons would show the Greek agora, medieval market, Renaissance squares, plaza development, park development (Olmsted) industrial cities (Garnier) zoning, transportation changes and their spatial implications, fantasis plans for "futuristic" models, Wright, Saarinea, le Corbusier, Fuller, van Traa).

Resources: slide collection of important architectural complexes and developments in cities of the world, past, present, future. (models, fairs such as Expo'67)

Evaluation: How do these achievements answer the daily living requirements of the participants? What ideas can we adapt from them for our own current and anticipated needs?

Homework: Write down, or draw and label your impressions of the three places you remember best, of the slides shown.

Lesson Nine 90 Minutes

Lesson on: Redevelopment

Aim: To develop an organic view of redevelopment design in a given neighborhood.

Method: Have a prepared model of the local area. Discuss the question of environmental responsibility. Who is responsible for keeping the sidewalks clean? Who cleans the streets? Which is a public and which a private responsibility? Where are complaints heard? How are new developments initiated? (In a social studies framework, a mayor could be elected and commissioners appointed to assume the various responsibilities of parks, police, schools and answer to the public for present and anticipated conditions).

Analyze the model, building by byilding and space by space. Which are useful and why, which need renovation or redesign, which should be razed. What spaces are being underused? Where can waste space be reclaimed? Should street patterns be changed to accommodate better use (concept of the superblock-Clarence Stein, to eliminate traffic fatalities) what amenities could be introduced? Are their landmarks which should be preserved? Are there blight spots which must be corrected (railroad undercut, inadequately fenced, in housing area) Are there landmarks which could be developed?

Resources: Scale model prepared from data on official landuse map (Sanborn Co., obtainable from City Planning Commission at 2 Lafayette) and additional data in the form of textural and color notations, ornamental detail and condition of maintenance from on the spot sketches and photographs by the investigator. Scale determined by the diagrammed layout of seating plan arrangement used for the lesson - 4"-10 feet suitable. Dearth of school storage space necessitates that the model be light weight and easily portable. Styrofoam answers this requirement, can be cut with knife or hacksaw. Caution in adding color: spray paints cause partial disintegration of styrofoam. Textured, colored or painted papers may be pinned on with common pins. Toothpicks make satisfactory demountable joinings of the styrofoam buildings to the street bases.

Evaluation: Planning represents a choice between several alternatives. In order to make satisfactory decisions it is helpful to have as wide as possible background of information not only on present inventory but also on technological possibilities, imaginative and practical alternatives and a whole range of potentials which anticipate future needs, accommodate present ones, and respect the living heritage of the past.

Lesson Ten 90 Minutes

Lesson on: Final Problem, A Redevelopment Exercise

Aim: To evaluate the difference between matched groups in ability to relate form and function and in skill, vigor and mastery shown in defending design solutions against challenge.

Method: A prepared scale model of four city streets is set up on a central table for easy viewing from all sides.

Students Students

SCALE MODEL

J
U
R
Y Investigator

Students Students

The investigator presents the same problem in the same manner to three classes during their regular meeting times, in the presence of jurors.

One of these classes is the experimental group. The other two are controls. The jury is not told which is which.

Investigator "A city is for enjoyment by its people. People come to it for a better life. New York has been called "Fun City".

Here is a scale model of some actual streets around this school. Is it really fun as is or can you think of some changes that might make it better?

Suppose these guests (jurors) had the power and the money from both public tax funds and private investment funds to make changes. What would you aks them to do?

After stating the problem, the investigator leads the discussion and assigns activities according to four prepared categories for evaluation:

Each category has from one to three questions on it to be scored numerically on the following rating scale,

1 = Poor
2 = Fair
3 = Good
4 = Excellent

This produces numerical scores for comparison. In addition each juror submits a written statement re the hypotheses of the study.

Category 1, Involvement

Question 1. If so many things are wrong should the people, (a) set a match to it and burn it all down, or have it bulldozed away (negative-destructive involvement).
(b) leave it to the Mayor to figure out for himself since he gets paid for it (negative apathetic involvement).
(c) look it over and decide what to keep and what to change.

Category 2, Perception

Question 1. Natural form. Which way does the land slope as you walk west? Where does the street end? Are there trees on it? Where is it sunniest, where almost always dark?

Question 2. Manmade form. If you were small enough to walk in this model, what would you see at this point? What buildings on this block. How do they differ on the next block. Who uses them? What for? At what times? How do they look (color texture ornamental detail shape) What condition are they in? Where are there vacant lots or empty spaces?

Question 3. Values. What places do you like to go to and which do you avoid? Where might you make an appointment to meet a friend. What makes the good places good? The bad places bad?

Category 3, Manipulation

The class is divided into four groups to keep the size of each working group intimate, for a maximum chance of individual participation.

Each group is given one street from the prepared model. The buildings on the street are demountable, attached by toothpick insert into the styrofoam landform. Each group receives a hacksaw, fresh styrofoam, toothpicks, pins,colored papers and scissors.

Question 1. Democratic process. Did each member of the group participate? Was there discussion and hearing for all opinion? Was there organized listing of ideas from the group consensus before the re-modelling began.

Question 2. Respect for history and function. Did the students dump all the existing buildings indiscriminately or was there some concern for the preservation of landmarks, and evaluation of existing structure in terms of the adequacy of its form in relation to its function and the desirability of its function.

Question 3. Site and access and interrelationship with the larger city organism. Did the group send an emissary to check with other groups working on models of adjacent streets to prevent duplication and waste effort? Was there evidence of concern for nodal relationships in the siting of housing, business, recreation, service buildings and spaces.

Category 4, Defense

Question 1. Social implication of change. What buildings did you take out? What had they been used for? Where will the people go who had been using them?

Question 2. Symbolic form and functional form. What new buildings did you put in? Why do they have this or that particular shape? What happens in the spaces between them?

Question 3. Spatial Design. Show me the new spaces you have created between buildings. How are they an improvement on the old ones? Is there any particular reason why each are set up in this, rather than another place. How are people expected to get around from place to place?

Resources: Styrofoam model, fresh styrofoam, hacksaws, pins, toothpicks, scissors, papers. Jurors.

Evaluation: Comparative test scores and written opinions separately submitted.

Were the jurors able to identify the experimental from the control group on the basis of a qualitative difference in their answers?

3. Experimental Results

An analysis of nine dependent variables adjusted for covariants found significant differences in the terminal drawings of the experimental group at as compared with the two control groups, at the .01 level in the case of the first two stimuli and the .05 level in the third stimulus.

Density and saturation responses varied according to the stimulus. Density response to stimulus one, a waterfront scene of ambiguous legibility, was not significantly different (null hypothesis). Density response to stimulus two, Times Square, was highly significant at the .01 level. Density response to stimulus three, the school on its street, showed the null hypothesis.

Saturation, or number of times viewed, showed a very high F ratio for the first stimulus, significant at the .01 level, indicating that the experimental group looked much more often at the exposure. Saturation for stimulus two was not significantly different, indicating a surprising lack of correspondence with the density of observations which was significantly high at the .01 level. It is apparently possible to look less often and observe much more. Saturation at stimulus three showed no significant difference.

Pictorial scores, rated under the five point scale described in "Methods", showed the experimental group scored significantly higher at the .01 level in responding to the first stimulus, significantly higher at the .01 level in responding to the second stimulus, and significantly higher at the .05 level in responding to the third stimulus.

This leads to the conclusion that students given the experimental curriculum perceive the environment more strongly, as expressed by their terminal drawings, scored on the basis of recognition of major elements, indication of movement in space, awareness of transitional forms, recognition of textural and light and dark variations, and inclusion of significant detail.

The differences in the number of recorded responses, or density variable, seem to vary in accordance to the "imageability" strength of the stimulus: a significantly high response to Times Square, no significant difference in response to the waterfront or school.

The differences in saturation may relate to the ambiguity and level of interest provoked by the stimulus. The experimental group looked significantly longer at the waterfront, which is complex but relatively visually illegible. Times Square was viewed with no significant difference in the number of times, but many more statements (density responses) were provided by the experimental group at the .01 level, on the basis of the same number of viewings. The third stimulus, which was relatively devoid of actions, showed no significant difference in the number of times viewed, but a significant difference at the .05 level in the terminal drawings made by the experimental group.

The statistical tables of comparison appear in Appendix One.

3. Experimental Results - Juror appraisal

A jury of three professional people evaluated the differences between the experimental and control groups. The jury consisted of Mrs. Ruth Halsband, art educator and district supervisor of art programs, employed by the Board of Education of New York City, Mr. Robert Weinberg, planner and architect with offices at 400 Madison Avenue, New York City, New York and Professor David Farley, Planning Department, School of Graduate Administration, New York University.

Juror One - the art supervisor, found a better than two to one advantage in favor of the experimental group and commented "while the control group did not compare in performance with the experimental group, it was obvious that had they received the same ten week program they would have done as well -- they were very similar in background, level of learning. The value of this art education program is great. It offers the children of our schools not only the sharpening of perception but presents them a way of thinking and planning for urban improvement - a timely and sorely needed area in education."

Juror Two - professional planner and architectural critic-at-large on metropolitan radio station WNYC was more impressed by the strategy of participation involvement of all the groups, especially those who came in "cold", i.e. control groups; and commented "there was a very definite indication of more intelligent use of the tools of planning by the experimental group than by the control groups who approached this entire operation with interest and enthusiasm (as if this was an attractive "game") but without any clear knowledge of what it was all about."

Juror Three - architect and professor of planning, commented tersely "you have made your point."

A consensus of the jurors upheld both hypotheses of the study, with one dissent on hypothesis two.

"Of the three classes to whom the problem was presented (replanning a city block the way they would like it, the experimental group clearly demonstrated their superior understanding of the problem, planned the new blocks with considerations of usefulness of buildings proposed, its implication for people now living and working there, also beauty aspect of new plans and buildings."

"The experimental group were also superior when it came to verbally defending their plans, posing perceptive questions to each other. Testing validity of ideas of their classmates."

Juror two dissented on the second hypothesis "strangely enough, in the final group reactions having to do with defense of the plan they made, my notes showed the groups almost equal in the energy and seriousness of which they defended the proposals they had made, though here again, the afternoon group were able to do so more intelligently and coherently. This shows at least that there is a great deal of latent energy, interest and almost emotion, among young people that can be directed towards trying to improve their environment.

One can therefore draw the conclusion that given the type of informative teaching and evocative training in using their eyes and their minds that such a subject presents them, the potential concern of young people in their physical surroundings can be brought out by the type of course here proposed."

Juror scores appear in appendix one.

The following report, broadcast over station WNYC is enclosed for dissemination.

WYNC REPORT #36
by Robert C. Weinberg

TEACHING EKISTICS IN OUR SCHOOLS

The prominent Greek city planner, Constantine Doxiadis, whose worldwide practice includes not only architecture and town planning but the entire range of problems affecting the improvement of the human environment of our urban areas, has coined the word "ekistics" to cover this major subject, of which he is a fervent propagandist. He rightly contends that one of the most important objectives in the world today is to plan for people everywhere to live in our urban centers of ever-increasing size without succumbing to the man-made mess that results from pollution and non-planning.

One of the aspects of Ekistics, as I see it, is that knowledge of these problems must be brought home to people of all sorts and not simply to the specialists engaged in curing our urban ills. If all people are to be aware of what is happening around us, the obvious need is to train young people at the earliest possible age to observe what is happening to the physical surroundings where they live and to think about what can be done to improve them. Only thus can they, as future citizens, participate in making the designs in cooperation with the experts, and carrying out the decisions with public officials. If these designs and decisions are to be followed through, our future citizens must provide the support that the officials need if any progress is to made.

I was recently privileged to participate in any important step being taken to achieve this awareness among the children in New York's public schools. Mrs. Amalia Pearlman, an educator connected with New York University's Graduate School of Education, persuaded the city's Board of Education to conduct an experiment with eighth graders in several of the city's junior high schools located in the so-called deprived areas. At the end of this past Spring semester, a group of us were invited to observe the reactions and accomplishments of several groups of eighth graders, to whom an identical problem in local neighborhood planning was presented in a most ingenious way. A simple styrofoam model of a four-block area surrounding the school where the test was taking place had been prepared, with each building brightly colored and identified and so constructed as to make it easy to remove. After they had time to study the model the students were given questions, such as "What do you see when you come to school along these blocks?"; "What is at the end of the street when you look towards the river?" or, "towards the other direction?"; "Which way does the street slope?"; "What things do you like that you pass by?"; "What things do you think are bad and should be changed?"; "How would you change them?" Other questions bore on the relationship of people to the public authorities to whom

one could look for help. The final question was "How you would change things, a) by bulldozing the whole area and starting all over again?; b) by making improvements here and there?; c) by leaving the whole thing to Mayor since it is of no concern to you? or d) would you like to participate in improving things, and begin to make suggestions of you own?" A gratifying majority of the students gave the last answer.

These are obviously provocative things for eighth graders to think about; and, after they had reacted to the test, mostly with considerable intelligence, the class was broken up into several groups of 5 or 6 students, each of which was given the model of one block, and told to go ahead and rebuild it, removing the models of those buildings that they thought should come down and putting in new ones made up of pieces of light styrofoam which they could cut into whatever shapes they wanted to.

I wish I had the time here to go into detail on the remarkable results that the test achieved both in a class which had been studying Ekistics (for this is what it really is) for a semester under Mrs. Pearlman's direction and other classes, of the same age, who, given the test "cold", and therefore not specifically trained in observing their surroundings, were nonetheless alert and aware of what the problem involved. Surely this is a good beginning and if Ekistics is to be the name of the new science of improving our physical surroundings, this beginning in our schools is an auspicious one.

This is Robert C. Weinberg, critic-at-large in Architecture and Planning.

CONCLUSIONS AND RECOMMENDATIONS

The subject matter of ekistics brought enthusiastic response from both experimental and control groups using a technique of rapid three dimensional sketching (whose materials were styrofoam blocks, landforms and toothpick connectors). Students subjected to the experimental effect showed a more organic approach to environmental design as an overall complex of many interacting factors, emphasizing the creation of urban space.

Urban perception can be strengthened through education according to the statistical findings of a comparison of the terminal sketches of experimental (ekistic-educated) and control groups (no ekistic education).

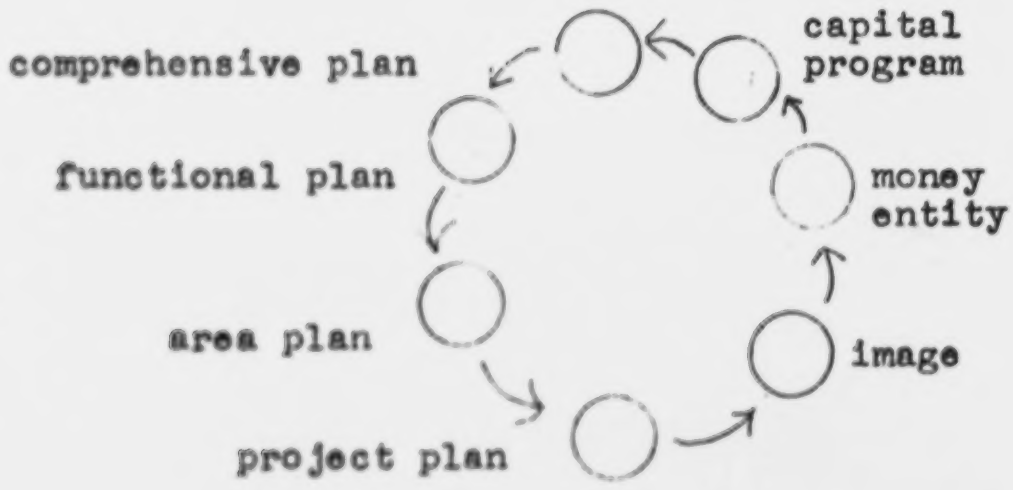
Visual education in ekistic problems offers interdisciplinary reinforcement of concepts relating to history, geography, economics, as well as fresh insights into the nature of contemporary art. It is not primarily dependent on reading skills, and is therefore a useful tool in involving the non-academically minded segment of the school population in civic preparation.

The concepts and curriculum of ekistic study are relatively new to general education. Implementation requires a well trained corps of ekistically aware teachers backed by strong administrative support. Previous programs relying on strong outside support from other than school organizations collapsed when the outside support diminished or was diverted.

Therefore, it is recommended that a teacher training film based on the findings of this study be produced as the "image" component of a systems design for ekistic education. Budget $20,000 time 1 year.

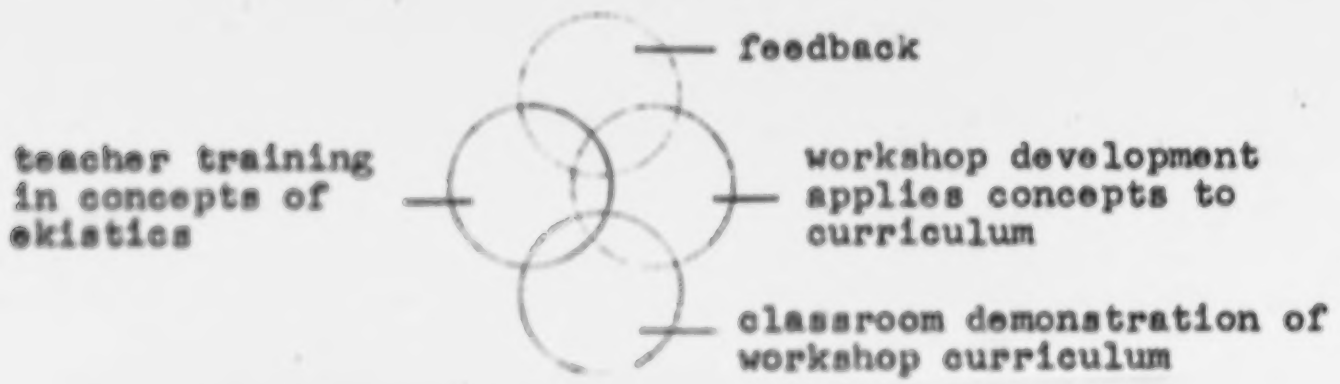
Systems design consists of a system of interdependent units functioning in relation to one another to produce a single outcome. The desired single outcome of ekistics education is to prepare every student to participate in the environmental planning of his time era with social, aesthetic and ecological awareness.

The components of a systems design, as process, present the following paradigm (adapted from the Philadelphia total process of city planning Design of Cities p. 270)



The Comprehensive Plan, based on the experience and research of the other components, rooted in an understanding of the community, sets forth an interrelated, balanced set of objectives.

The Functional Plan sets forth the physical organization, on a regional basis, of a manageable number of factors in their interrelation to one another


feedback
teacher training in concepts of ekistics
workshop development applies concepts to curriculum
classroom demonstration of workshop curriculum

The Area Plan sets forth for a limited geographic area, in correlation with the functional plan, the administration of the new curriculum. A tri state development for an area which has common geographic/economic interests, such as New York, New Jersey, Connecticut could include student exchange after the example of the American Foreign Student interchange to facilitate regional understanding.

The Project Plan sets forth in explicit lesson plan terms the nature of the project or projects necessary. Curriculum described under "findings" would serve as the project component. Additional project components would depend on a scope and sequence development from kindergarten through twelfth grade, on such themes as the "City as an Act of Will", and the "The Awareness of Space as Experience". Such a development should be undertaken by a group of professional educators such as the I.S.A. or similar study groups.

The "Image" sets forth in experimental terms what it would be like to see and move about in the project. A motion picture as training film for in-service teachers is recommended as the component to be developed from the "Project" curriculum described under "findings". The cooperation of the motion picture department of the School of Education of New York University has been offered contingent upon the assurance of funding estimated special expenses such as processing, price of film, and reproducing, requisite to the preparation of such a film.

The Money Entity is the cost estimated stated in the proposal budget for accomplishing various components or units of the systems design.

The Capital Program is an apportionment of time, which sets forth the sequence and dimension of administrative educational action to implement the unit and component elements of the system.

The Comprehensive Plan is reviewed annually by educators in the disciplines involved, by professionals in the field of environmental planning and by administrators of the school systems in the areas where it is given, including feedback review of the classroom demonstrations resulting from workshop development and new concepts or discovery in the architectural world and the professional domain of planning, findings to be fedback into new workshop development of the functional component, thus reactivating the cycle of process.

It is recommended that implementation of the findings of this study be pursued by systematic development of

1. a training film
2. a scope and sequence development
3. workshops, classroom demo., feedback
4. liberal arts course for college undergraduates
5. tri-state program leading to regional programs
6. systematic integration of any or all of the foregoing components into a comprehensive plan of systems as outlined, with annual review by educational and professional non-educational specialists in planning, architecture, art and social history.

APPENDIX I

Analysis of Co Variance for Density Response to Stimulus One

source of variation	d.f.	s.s.	m.s.	F	P
between	2	14.6633	7.3316	.352	n.s.
within	59	1227.6581	20.8078		
total	61				

	Treatment Means	Adjusted Means
Experimental	11.2381	10.9701
Control 1	9.8947	10.3683
Control 2	9.9583	9.8179

not significant

Density Response to Stimulus Two

source of variation	d.f.	s.s.	m.s.	F	P
between	2	295.3886	147.6943	7.510	$<.01$
within	59	1160.3194	19.6664		
total	61				

	Treatment Means	Adjusted Means
Experimental	15.0476	15.0041
Control 1	11.0000	11.2026
Control 2	10.0833	9.9601

significant at .01 level

Analysis of Co Variance for Density Response to Stimulus Three

source of variation	d.f.	s.s.	m.s.	F	P
between	2	14.5401	7.2701	.433	n.s.
within	59	9991.4703	16.8046		
total	61				

	Treatment Means	Adjusted Means
Experimental	9.6190	9.6463
Control 1	9.1053	8.9684
Control 2	8.1467	8.5012

not significant

Analysis of Co Variance for Saturation Response to Stimulus One

source of variation	d.f.	s.s.	m.s.	F	P
between	2	110.9203	55.4602	18.237	<.01
within	59	179.4231	3.0411		
total	61				

	Treatment Means	Adjusted Means
Experimental	8.3810	8.3789
Control 1	5.1579	5.1659
Control 2	8.2083	8.2038

very high F ratio
significant at 01 level

Analysis of Co Variance for Saturation Response to Stimulus Two

source of variation	d.f.	s.s.	m.s.	F	P
between	2	10.0801	5.0400	2.407	N.S.
within	59	123.5524	2.0941		
total	61				

	Treatment Means	Adjusted Means
Experimental	6.3810	6.3849
Control 1	7.1579	7.2132
Control 2	6.2500	6.2028

not significant

Analysis of Co Variance for Saturation Response to Stimulus Three

source of variation	d.f.	s.s.	m.s.	F	P
between	2	3.9875	1.9938	.913	n.s.
within	59	128.8490	2.1839		
total	61				

	Treatment Means	Adjusted Means
Experimental	4.9524	5.0151
Control 1	5.8947	5.6874
Control 2	5.2083	5.3174

not significant

Analysis of Co Variance for Pictorial Response to Stimulus One, terminal drawing, (P1)

source of variation	d.f.	s.s.	m.s.	F	P
between	2	20.2413	10.1206	13.127	<.01
within	59	45.4871	.7701		
total	61				

	Treatment Means	Adjusted Means
Experimental	3.6190	3.6558
Control 1	2.8421	2.7745
Control 2	2.2917	2.3130

significant at .01 level

Analysis of Co Variance Pictorial Response Stimulus Two (P2)

source of variation	d.f.	s.s.	m.s.	F	P
between	2	16.9164	8.4582	9.675	<.01
within	59	51.5819	.8743		
total	61				

	Treatment Means	Adjusted Means
Experimental	3.2857	3.2979
Control 1	2.2632	2.3172
Control 2	2.1667	2.1132

significant at .01 level

Analysis of Co Variance for Pictorial Response to Stimulus Three (P3)

source of variation	d.f.	s.s.	m.s.	F	P
between	2	7.8958	3.9479	4.517	<.05
within	59	51.5635	.8740		
total	61				

	Treatment Means	Adjusted Means
Experimental	2.8571	2.8466
Control 1	2.4737	2.5251
Control 2	2.0417	2.0102

significant at the .05 level

critical values $F_{(2,60)}\ \alpha = .05 = 3.15$

$F_{(2,60)}\ \alpha = .01 = 4.98$

JUROR SCORES

Experimental	Subject	Question	Juror 1	Juror 2	Juror 3
	3	01	4	4	4
	3	02	4	4	4
	3	03	3	4	3
	3	04	4	4	4
	3	05	4	4	3
	3	06	3	4	4
	3	07	4	2	3
	3	08	4	3	3
	3	09	4	2	4
	3	10	4	3	3
			38	34	35
Control 1	1	01	2	4	3
	1	02	2	3	2
	1	03	2	4	3
	1	04	3	2	2
	1	05	2	4	3
	1	06	1	2	1
	1	07	1	3	2
	1	08	2	3	2
	1	09	1	2	1
	1	10	2	3	2
			18	30	21
Control 2	2	01	1	not present	1
	2	02	1		2
	2	03	1		2
	2	04	2		1
	2	05	1		1
	2	06	3		2
	2	07	3		3
	2	08	2		1
	2	09	2		2
	2	10	1		1
			17		16

APPENDIX TWO

Another demonstration with three matched groups offered the opportunity to vary the instructional strategy.

In place of the curriculum described under "Findings", (heavily saturated with social reference as well as aesthetic problems), lessons were offered in a more formal art context, emphasizing textures, the shaping of spatial volumes, the composition of a clearly defined spatial network of simultaneous movement systems, vehicular, pedestrian pavedway,greenway, and the design of focal points in an area.

A certain objectivity prevailed in the experimental group, which tended to treat the problem as an acedemic excercise. This is in contrast to the previous experimental group, whose involvement was subjective to the point where students were beginning to ask, "Is this just school stuff or is it real?", to which the consultant planner replied gently "You can make it real."

In the matter of participation, the more responsive students become leaders in developing rather striking spatial configurations, but they did not have a committed following. Some of the slower students did not participate at all. That part of the group characterized by an able student teacher as "hard core apathy" took the position that "if the lot is standing empty with barb wire its supposed to be like that". This is again in contrast to the previous experimental group, where elements of the class identified as "hard core apathy" by their refusal to take part in school activities other than compulsory ones, for example refusal to bring permission slips for outside of class excursions, refusal to attend Martin Luther King's funeral, nevertheless contributed in a major way to the final problem, advocating such proposals as a pedestrian walk spanning over the Miller Highway from the roof of the pier building to the 6th floor of a luxury hotel to be built opposite the pier as a splendid approach to a great city, affording the visitor an immediate panoramic view of the city's power, in place of the present dingy allotment of warehouses, parking spaces and dilapidated housing in the West Side of the mid-Manhattan area. The same "hard-core apathy" source stipulated that the time allocation should be such that no existing businesses which employ local buildings be razed until provision had been made to relocate them, at which time a more efficient spatial pattern of one large building with truck access would combine the warehousing functions currently spread out among one two and four story buildings in various stages of decay.

In the perception, the experimental group in the new strategy were aware of the difference between the densely packed old housing facing the school one one side of the street and the open spaced, landscaped high rise project developments on the other side of the school. Controls also sensed the spatial difference. The experimental groups, however, had some kind words for certain features of the old housing, pointing out that while the modern project was certainly clean, well oriented and efficient, it lacked the neighborly interaction, warmth texture and individual distinction of the old, once ornamental, now sadly depreciated walk ups. One group claimed the advantages of the new privacy, the other deplored its limitations. "You go up the elevator, you eat you sleep you watch T.V. No life." Change is not necessarily all progress. Diversity, the accidental encounter, are valuable attributes of the city.

Redesigns featured some striking patters including a layered formal organization in a multilevel complex of harmonious volumes of space articulated by curved aerial ramps harmonizing with rounded buildings and planned to differentiate vehicular from pedestrian access and circulation paths (experimental group) as compared with the control groups more piecemeal development of good but scattered improvements in receational facility. The spatial compositions were of greater sophistication than those of the previous experimental group, but generated less popular interest.

The conclusion is, that for the purpose of preparing art students to participate in the urban design of their time, the first experimental strategy, described under "Findings" should precede the second, purely aesthetic strategy. The order of the first importance is to obtain commitment of all the class members. Once this has been established, more specialized studies of formal aspects of urban aesthetics can be explored in a sequential development related to the continued maturation and levels of interest shown by students.

ERIC REPORT RESUME

An experimental demonstration with eighth-grade classes in New York City tested "an instructional strategy which provides for participation of art students in urban planning".

The common denominator of continuous change determined the nature of the strategy as heuristic, emphasizing process, rather than didactic, emphasizing product. Conceptual content is based on the interdisciplinary reinforcement of aesthetic and social ideas. "The City as an Act of Will", "The Awareness of Space as Experience" and "Simultaneous movements Systems" are key-themes developed in a curriculum unit which received supportive review from the American Institute of Planners and the Architects Institute of America.

Differences in urban preception, measured by response to a tochistoscopic presentation of urban stimuli, found significent Fratios at the OI level of confidence in the terminal drawings of the experimental group as compared with control groups equated by the technique of covariance.

Jurors observing the groups in process of solving an identical final problem upheld the hypotheses regarding form and function, and articulate defense of redevelopment plans. Critic-at-large in architecture and planning heralded the experimental curriculum on WNYC "if Ekistics is to be the name of the new science of improving our surroundings, this beginning in our schools is an auspecious one."

Systems design development of interdependent ekistic units is recommended.

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